

Long-range Assembly of Semiconductor Nanorods in Light-Emitting Application

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Colloidal semiconductor nanorods (NR) are attractive emitters with high color purity containing linearly polarized light. Long-range assembly of NRs is demanded as a uniform and process-friendly film formation method for electronic devices. Herein, we aligned NRs with a unidirectional orientation by off-centered spin coating of NRs with poly(9-vinylcarbazole) (PVK). The contrast ratio represents the photoluminescent and electroluminescent polarization of blend film. The unidirectional assembled NR bundles grew when the retardation of the film evaporation rate. Accordingly, NRs-PVK blend films were close-packed hexagonally in the vertical direction. Time-resolved PL analysis revealed a more intimate interaction between PVK and NR of the blend film.